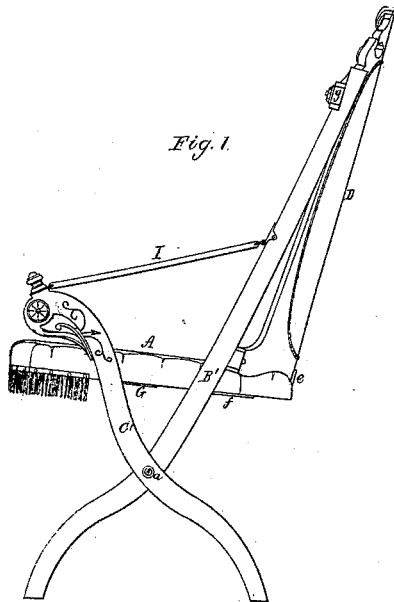


*P. M. Holmes,*

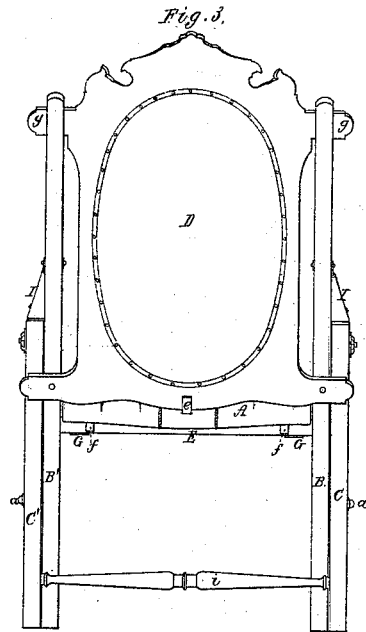
*Folding Chair.*

*No. 111,209.*

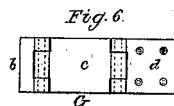
*Patented Jan. 24, 1871.*



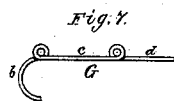
*Fig. 1.*



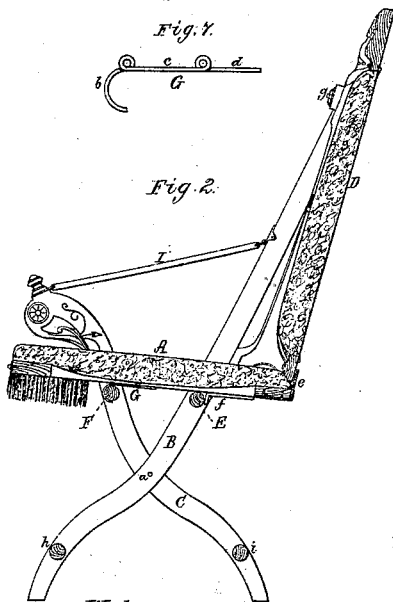
*Fig. 3.*



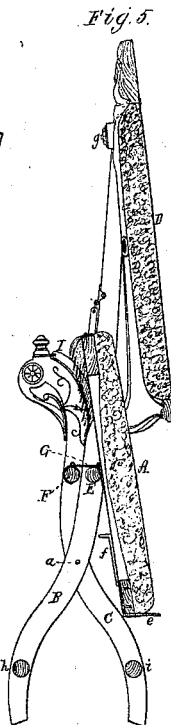
*Fig. 6.*



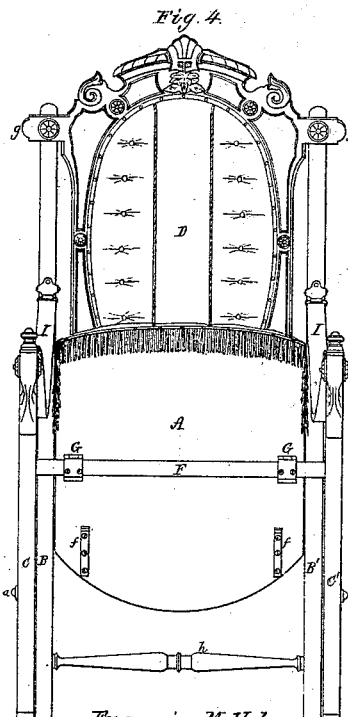
*Fig. 7.*



*Fig. 2.*



*Fig. 5.*



*Fig. 4.*

*Witnesses*  
*S. H. Fisher*  
*L. N. Miller*

*Francis M. Holmes,*  
*by his attorney*  
*R. H. Lundy*

# United States Patent Office.

FRANCIS MARCH HOLMES, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 111,209, dated January 24, 1871.

## IMPROVEMENT IN FOLDING-CHAIRS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all persons to whom these presents may come:*

Be it known that I, FRANCIS MARCH HOLMES, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Folding-Chairs; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a side elevation;

Figure 2, a longitudinal section; and

Figure 3, a rear view of one of my improved folding-chairs.

The main features of the folding-chair as improved by me consist in a seat, A, two sets of crossed levers, B B' C C', a back, D, and two supporting seat-rungs, E F, arranged as represented in the drawing.

The longer levers B B' are crossed on the shorter one C C', and pivoted thereto, the pivots being shown at *a a*. Furthermore, the longer levers are disposed between and against the shorter levers, each pair being connected by one of the seat-supporting rungs.

Figs. 1, 2, and 3 of the drawing above mentioned exhibit the chair in an unfolded state, or ready for being sat upon.

Figure 4, however, denotes a front elevation, and

Figure 5, a vertical section of the chair as it appears when in a folded state, it being so constructed that, when in this latter condition, and its four feet may be resting on a floor, it will "stand alone," or, in other words, maintain its erect or standing position without extraneous aid, the line of direction or vertical from the center of gravity of the chair falling within the base or rectangle embraced within the feet of the legs.

Folding-chairs, as usually constructed, when folded, require to lean against some object, in order to sustain them from falling.

In my chair, as shown in the drawing, the legs are made of equal length, and the two-seat supporting rungs are arranged at equal distances from the pivots or joint-pins of the legs. By the "legs" of the chair I mean those portions of the levers that extend below the pivots of the levers. Furthermore, the seat is connected to the front of the two seat-supporting rungs by two double-jointed hinges G, each being composed of three leaves, *b c d*, arranged and jointed together as shown in figs. 6 and 7, of which—

Figure 6 denotes a top view, and

Figure 7, an edge view of one of such hinges.

That outer hinge-leaf *b*, which is fastened to the rung, is curved or made in the "hook-form," as shown, in order that it may embrace or partially extend around the rung, and thus relieve the connection-screws from strain, and prevent the rung from being split by such strain.

The other outer leaf *d* is screwed directly to the seat, the whole being arranged as represented.

The length of the middle leaf *c* should be equal to, if not a little greater than, the diameter or width of the back rung E, the purpose of the three-leaved or double-jointed hinges, as described, being to enable the seat to fold down in rear of the back rung; and when the chair is folded, to take position with respect to the other parts in manner as represented in figs. 4 and 5.

A back-stop, *e*, extends upward from the rear part of the seat at its middle, such stop being to bear against the posterior side of the back.

In addition to the said back-stop there are applied to the seat, so as to extend down from it in manner as represented, two or other suitable number of rung-stops *f f*, which, when the seat is resting on the two rungs E F, bear against the back rung.

One object of the additional stop *f* is to prevent sudden spreading asunder of the legs of the chair and falling of the chair to the floor during the act of folding it, which, without the rung-stops, would be liable to occur when the chair is without arm-bands or rests I I, and the seat may be in the act of being turned, so as to carry the back-stop entirely below the back of the chair.

The back-stop answers to relieve the back-rung from much of the strain to which it would be subjected by the rung-stops were no back-stops employed.

The rung-stops are advantageous in other respects.

At its upper part the back D has ears or projections *g g* to rest against and be fastened to the fronts of the longer arms of the levers B B'.

The lower part of the back may be tenoned into the said arms, or, if preferable, it may be furnished with ears to rest against, and be fastened to the levers B B'. Each pair of legs, near its feet or lower ends, is provided with a rung to extend from one to the other of such legs, the two leg-rungs being shown at *h i*. The seat and back may be upholstered, as shown, or be otherwise properly made or prepared.

The double-jointed hinges not only admit of the legs being made of equal length, and the seat-rungs being arranged at equal distances from their respective leg-pivots or joints, but enable the seat to fold over and down back of the back rung E during the act of folding the chair.

I make no claim to connecting the seat of a folding-chair to a rung by means of single-jointed hinges, or those having two leaves only.

What I claim as my invention may be stated as follows:

1. In a folding-chair, having the two sets of crossed levers and the two seat-supporting rungs, arranged substantially as described, the combination of the seat

with the front rung by means of double-jointed or three-leaved hinges, as described.

2. In a folding-chair, made with two sets of crossed levers and two seat-supporting rungs, as described, and with the seat connected to the front rung by double-jointed hinges, as set forth, the seat, as provided with the back-stop and one or more rung-stops, arranged to operate with the chair backs and the rear rung, substantially in manner as set forth.

3. A folding-chair as having a rigid seat or seat-frame hinged to a rung, as explained, two sets of

crossed levers and a back, combined to fold as described, and the pivots of the levers so arranged with respect to the feet thereof that the chair, when folded, and resting with all its feet on a floor or horizontal plane, shall be capable of "standing alone," or maintaining itself in an erect or standing position, all substantially as described.

FRANCIS MARCH HOLMES.

Witnesses:

R. H. EDDY,  
J. R. SNOW.